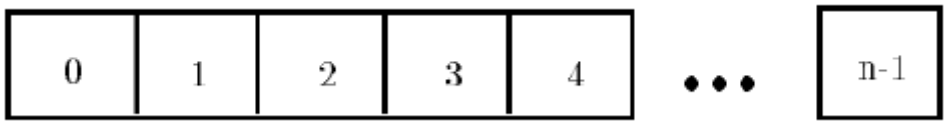
2. 【木塊問題/The Blocks Problem】

從左到右有 n 個木塊，編號為 0~n-1（如圖），0 < n < 25。要求模擬以下 4 種操作（下面的 a 和 b 都是木塊編號）。



(1) move a onto b：把 a 和 b 上方的木塊全部歸位，然後把 a 放在 b 上面。

(2) move a over b：把 a 上方的木塊全部歸位，然後把 a 放在 b 所在木塊堆的頂部。

(3) pile a onto b：把 b 上方的木塊全部歸位，然後把 a 及上面的木塊整體放在 b 上面。

(4) pile a over b：把 a 及上面的木塊整體放在 b 所在木塊堆的頂部。

注意：a 和 b 在同一堆的指令是非法指令，應當忽略。(Page 5-12，**UVa101**)

輸入（註 1）：	輸出（註 2）：
10	0: 0
move 9 onto 1	1: 1 9 2 4
move 8 over 1	2:
move 7 over 1	3: 3
move 6 over 1	4:
pile 8 over 6	5: 5 8 7 6
pile 8 over 5	6:
move 2 over 1	7:
move 4 over 9	8:
quit	9:

（註 1）

Input

The input begins with an integer n on a line by itself representing the number of blocks in the block world. You may assume that $0 < n < 25$.

The number of blocks is followed by a sequence of block commands, one command per line. Your program should process all commands until the `quit` command is encountered.

You may assume that all commands will be of the form specified above. There will be no syntactically incorrect commands.

（註 2）

Output

The output should consist of the final state of the blocks world. Each original block position numbered i ($0 \leq i < n$ where n is the number of blocks) should appear followed immediately by a colon. If there is at least a block on it, the colon must be followed by one space, followed by a list of blocks that appear stacked in that position with each block number separated from other block numbers by a space. Don't put any trailing spaces on a line.

There should be one line of output for each block position (i.e., n lines of output where n is the integer on the first line of input).